

switch, responsive to a distance between two of the successive locations, from confining at least part of the first cursor to the first polygon to confining at least part of the first cursor to the second polygon.

- 5 32. (once amended) The apparatus of claim 31 wherein the icon represents one of a sign of a manual sign language, a location relative to a human body, [a movement of a manual sign language] a topic of conversation, a sentence, a desired direction of movement of a second cursor on the display, a sequence of one or more graphics including an ideograph, and a symbol of a symbol set.

- 10 39. (once amended) An apparatus for selecting a menu option from a plurality of menu options, said apparatus comprising:

- 15 (a) a display area;
- (b) means for at least partially delimiting a plurality of selectable regions, each of the selectable regions outside the display area and each associated respectively with a menu option;
- (c) movement related signal receiving means for receiving a movement related signal indicating a location with respect to the display area;
- (d) a plurality of indicators, each associated respectively with one of the selectable regions, for indicating which one of the selectable regions is intersected by the location; and
- 20 (e[d]) selection means for selecting, in response to a first selection event associated with the selectable region intersected by the location, the menu option associated with the intersected selectable region.

- 25 40. (once amended) The apparatus of claim 39 wherein the first selection event includes a switch operation at or near the time the intersection occurs.

- 30 46. (once amended) The apparatus of claim 39 wherein the first selection event includes a switch operation; and wherein the selection means further comprises switch operation receiving means for receiving a signal indicating the switch operation.

47. (once amended) The apparatus of claim 39 wherein the selection means is at least partially

disabled in response to a second [first] selection event.

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48. (once amended) The apparatus of claim 47 wherein the selection means, in response to a third [second] selection event, is restored to the functionality it had prior to the second [first] selection event.

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53. (once amended) An apparatus for selecting a menu option from a plurality of menu options, said apparatus comprising:

- (a) means for displaying a plurality of selectable regions on a display area, each of the selectable regions associated respectively with a menu option, the plurality of selectable regions together at least partially circumscribing a region on the display area;
- (b) movement related signal receiving means for receiving a movement related signal indicating successive locations with respect to the display area [on the surface]; and
- (c) in response a quantity equalling or exceeding a predetermined quantity, the quantity being a function of the durations of a plurality of successive periods of intersection of two or more of the successive locations and one of the selectable regions, selection means for selecting the menu option associated with the intersected selectable region.

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65. (once amended) In a human interface system wherein a body member of an operator may indicate successive locations on a surface, a menu option selector comprising:

- (a) a detector area on the surface, the detector area [ and] including a plurality of selectable regions, each of the selectable regions associated respectively with a menu option, the plurality of selectable regions together at least partially circumscribing a region on the surface;
- (b) a confiner for confining the location indicated by the body member of the operator to the detector area; and
- (c) a selector for selecting, in response to a dwell event associated with any one of the selectable regions, the menu option associated with the selectable region associated with the dwell event.

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67. (once amended) An apparatus for selecting an option from a menu, said apparatus comprising:

- (a) a display area;

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- (b) means for displaying a plurality of menu options, [each associated respectively with one of a plurality of switches,] the display of the plurality of menu options together at least partially circumscribing a region on the display area, each menu option associated respectively with a position of a user activatable switch outside the display area, the switch being positionable with respect to the location of each menu option for selection thereof; and
- (c) a selector for selecting a particular one of the menu options in response to a first position of the switch corresponding to the particular menu option for a period equalling or exceeding a first predetermined time period[, in response to a first switch operation, the menu option associated with the operated switch].
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69. (once amended) The apparatus of claim 67 further comprising a plurality of submenu options associated with the particular menu option [one of the plurality of menu options], each of the submenu options associated respectively with a position of the switch [one of the plurality of switches]; and wherein the display means is further operative, responsive to the selection of the particular menu option [a selection of the menu option associated with the plurality of submenu options], to display the plurality of submenu options, the display of the plurality of submenu options together at least partially circumscribing the region on the display area; and wherein the selector, in response to a second position of the switch corresponding to a specific one of the submenu options for a period equalling or exceeding a second predetermined time period, [switch operation,] is further operative to select the specific submenu option [submenu option associated with the operated switch].
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119. (twice amended) The voice output system of claim 114 wherein the delimit device is further operative to delimit a second selectable region outside the working region and adjacent one of the first selectable regions, the second selectable region selectable by the user and having an external boundary wherein the external boundary includes the side of the second selectable region furthest from the working region, the second selectable region having a confiner for preventing the movement related signal indicating the location from moving beyond the external boundary of the second selectable region or having an activation area extending beyond the external boundary of the second selectable region, the second selectable region associated with a second sequence of one or more characters, a second sequence of one or more
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words, or a second sequence of one or more symbols representing the second sequence of one or more words.

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136. (once amended) The voice output system of claim 134 wherein the indicator is further operative to [may] indicate a second quantity which is a function of the difference between
- (a) a predetermined period; and
  - (b) the difference between the time the second location occurs and the time the first location occurs.

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148. (once amended) The voice output system of claim 147 wherein the specific menu option either includes [is further associated with a specific sequence of one or more characters, words, or symbols including] at least part of the particular sequence, or represents a class of characters or words, the class including the particular sequence.

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149. (once amended) The voice output system of claim 148 wherein the class is any one of:
- (a) a class of characters having a common element in Morse code;
  - (b) a part of speech;
  - (c) a meaning;
  - (d) a physical characteristic;
  - (e) a functional characteristic;
  - (f) a direction;
  - (g) a class of characters having an extension at least a predetermined distance above a baseline; and
  - (h) a class of characters having an extension below a baseline[;].

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159. (once amended) A voice output system comprising:

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- (a) a display area including a working region with a periphery;
- (b) a display device for displaying menu options on the display area, each menu option displayed adjacent the periphery of the working region, each menu option associated respectively with a position of a user activatable switch outside the display area, the switch being positionable with respect to the location of each menu option for selection thereof, each menu option associated respectively with a sequence of one or more

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characters, a sequence of one or more words, or a sequence of one or more symbols representing a sequence of one or more words, for selection via the switch; and

- (c) a voice output device for speaking the sequence of one or more characters or words associated with a particular menu option, in response to the position of the switch corresponding to the particular menu option for a period equalling or exceeding a predetermined time period.

160. (twice amended) A voice output system comprising:

- (a) a display area including a working region with a periphery;
- (b) a display device for displaying menu options on the display area, each menu option displayed adjacent the periphery of the working region, each menu option associated respectively with a position of a user activatable switch outside the display area, the switch being positionable with respect to the location of each menu option for selection thereof, each menu option associated respectively with a sequence of one or more characters, a sequence of one or more words, or a sequence of one or more symbols representing a sequence of one or more words, for selection via the switch; and
- (c) a voice output device for speaking the sequence of one or more characters or words associated with a particular menu option, in response to the position of the switch corresponding to the particular menu option for a first time period equalling or exceeding a predetermined time period; and wherein the display device further includes an indicator for indicating at least the difference between the first time period and the predetermined time period.

161. (twice amended) A voice output system comprising:

- (a) a display area including a working region with a periphery;
- (b) a menu hierarchy including a menu comprising a plurality of menu options, a specific one of the menu options associated with a submenu comprising a plurality of submenu options, each of the submenu options associated respectively with a sequence of one or more characters, a sequence of one or more words, or a sequence of one or more symbols representing the sequence of one or more words;
- (c) a display device for displaying menu options and submenu options on the display area, each menu option displayed adjacent the periphery of the working region, each menu

option associated respectively, and each submenu option associated respectively, with a position of a user activatable switch outside the display area, the switch being positionable with respect to the location of each menu option or submenu option for selection thereof; and

- 5 (d) a voice output device for speaking the particular sequence of one or more characters or words associated with a particular one of the submenu options, in response to the position of the switch corresponding to the specific menu option for a first time period equalling or exceeding a first predetermined time period and thereafter to the position of the switch corresponding to the particular menu option for a second time period equalling or
- 10 exceeding a second predetermined time period.

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15 162. (once amended) A voice output system comprising:

- (a) a display area including a working region with a periphery;
- (b) a display device for displaying menu options on the display area, each menu option displayed adjacent the periphery of the working region, each menu option associated respectively with a position of a user activatable switch outside the display area, the switch being positionable with respect to the location of each menu option for selection thereof, each menu option associated respectively with a sequence of one or more characters, a sequence of one or more words, or a sequence of one or more symbols representing a sequence of one or more words, for selection via the switch; and
- 20 (c) a voice output device for speaking the particular sequence of one or more characters or words associated with a particular one of the menu options, in response a quantity equalling or exceeding a predetermined quantity, the quantity being a function of the duration of a plurality of periods in which the position of the switch corresponds to the
- 25 particular menu option.

163. (once amended) A method of speaking for an individual having impaired motor capability and impaired speech, said method comprising the steps of:

30 simultaneously displaying selectable regions adjacent a working region on a display, one or more of the selectable regions associated respectively with a sequence of one or more characters, a sequence of one or more words, or a sequence of one or more symbols

representing a sequence of one or more words;

receiving a movement related signal indicating a location with respect to the display, the movement related signal responsive to user movement indicating a potential user selection;

speaking the sequence of one or more characters or words associated with a particular selectable region[s] responsive to a period of intersection of the particular selectable region and the location indicated by the movement related signal or the location on the display closest thereto, the period equalling or exceeding a predetermined period, whereby the user may make a selection although the user movement overshoots the particular selectable region on the display.

204. The apparatus of claim 1 wherein the movement related signal receiving means is not flush against the display screen.

205. The apparatus of claim 1 wherein the movement related signal indicating successive locations is responsive to movement of a body member of a user over a one dimensional range of motion of the body member; and wherein the successive locations intersect the particular selectable region over at least five percent of the range of motion of the body member.

## II. REQUESTS UNDER 37 C.F.R. §107(b)

In the Office Action, the Examiner concludes that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to *modify* each of the selectable region in Fig. 2 of Ito to be adjacent a side of the polygon on the display, and the plurality of selectable regions together at least partially circumscribing a region of the display since the number of selectable regions and the location of the selectable regions are the desirable choice based on the desired commands to be allocated to the selection regions (note col. 7, lines 32-40 of Ito)." (Office Action, p.4, emphasis added). This conclusion ignores Ito's teaching, as described in detail in the discussion of claim 20 in the Remarks section below.. The proposed modification is nonobvious. It appears that the Examiner is relying upon her personal knowledge for an incentive to modify Ito. Applicant requests the Examiner provide a prior art reference or affidavit under 37 C.F.R. §107(b) evidencing